

WHAT IS CLAIMED IS:

1. A substrate for an ink jet head including a plurality of heaters for discharging ink, a driving circuit for driving the plurality of heaters, and a 5 substrate temperature sensing element for sensing a substrate temperature, all of which are formed on the same substrate,

wherein a protective element is provided between the substrate temperature sensing element and 10 a connection pad electrically which is connected with the substrate temperature sensing element and which establishes electrical connection with an external component.

15 2. The substrate for an ink jet head according to claim 1, wherein the protective element is disposed at a connection pad side relative to an intermediate position on wiring between the connection pad and the substrate temperature sensing 20 element.

25 3. The substrate for an ink jet head according to claim 1, wherein a wiring width between the connection pad and the protective element is wider than that between the protective element and the substrate temperature sensing element.

4. The substrate for an ink jet head according to claim 1, wherein the protective element is disposed at a side of an input/output pad for the substrate temperature sensing element relative to a 5 wiring intersecting portion where wiring intersection is made with another wiring layer on the substrate.

5. The substrate for an ink-head according to claim 1, wherein the protective element is provided 10 for a logic circuit unit composing the driving circuit, and a size of the protective element connected to the substrate temperature sensing element is equal to that of the protective element connected to the logic circuit unit.

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6. The substrate for an ink jet head according to claim 1, wherein the substrate temperature sensing element includes a diode sensor.

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7. The substrate for an ink jet head according to claim 6, wherein the protective elements are a protective diode, and is disposed between an anode of the diode sensor and a power source line, between the anode and a ground, between a cathode of the diode 25 sensor and the power source line, and between the cathode and the ground, respectively.

8. An ink jet head attachable/detachable to an ink jet recording apparatus comprising:

5 a substrate for an ink jet head having a plurality of heaters for discharging ink, a driving circuit for driving the plurality of heaters, and a substrate temperature sensing element for sensing a substrate temperature, all of which are formed on the same substrate, wherein a protective element is provided between the substrate temperature sensing 10 element and a connection pad which is electrically connected with the substrate temperature sensing element and which establishes electrical connection with an external component; and

15 a member for forming a liquid channel jointed to the substrate for an ink jet head and associated with the heater and also forming a discharge port which belongs to one end of the liquid channel.

9. An ink jet recording apparatus comprising:

20 a head including a substrate for an ink jet head having a plurality of heaters for discharging ink, a driving circuit for driving the plurality of heaters, and a substrate temperature sensing element for sensing a substrate temperature, all of which 25 that are formed on the same substrate, wherein a protective element is provided between the substrate temperature sensing element and a connection pad

which is electrically connected with the substrate temperature sensing element and which establishes electrical connection with an external component; and means for applying signals to the connection

5 pad to acquire information about head temperature by supplying the signals to the connection pad.

10. The ink jet recording apparatus according to claim 9, further comprising:

10 a carriage operable to removably support the ink jet head and to make the ink jet head to scan a print medium.